

Name: _____

Date: _____

Period: _____

Geometry CRT Review Version 2

1. Statement 1: The 2002 Olympic skiing events were held in Utah.

Statement 2: John skied in Utah in 2002.

Which of the following is a valid conclusion based on both of the statements above?

- a. John skied in the 2002 Olympics
- b. John did not ski in the 2002 Olympics.
- c. If John did not ski in the 2002 Olympics, then he did not ski in Utah.
- d. If John skied in the 2002 Olympics, then he skied in Utah.

2. Which of the following statements is false?

- a. Two angles are supplementary if and only if the sum of the measures of the angles is 180° .
- b. Two angles are congruent if and only if the angles are vertical angles.
- c. A triangle is an isosceles triangle if and only if two angles of the triangle are congruent.
- d. Two triangles are similar if and only if the corresponding angles of the two triangles are congruent.

3. Given the statement, "If an angle measures 30 degrees, then it is acute," what is the converse and is it true or false?

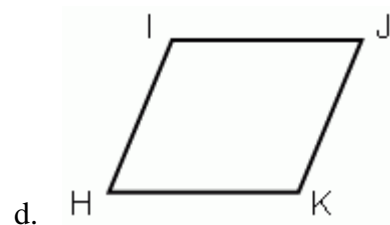
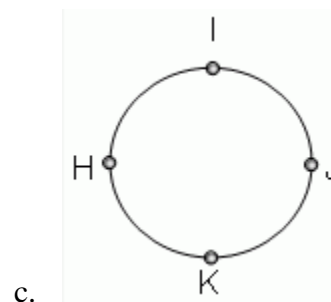
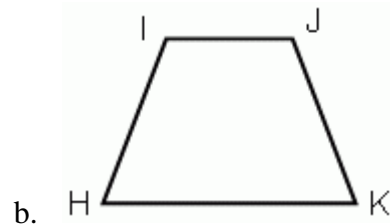
- a. "If an angle is acute, then it measures 30 degrees;" True
- b. "If an angle is acute, then it measures 30 degrees;" False
- c. "If an angle is acute, then it does not measure 30 degrees;" True
- d. "If an angle is acute, then it does not measure 30 degrees;" False

4. If the lines are parallel, then the alternate interior angles are congruent. Which statement is the inverse of the statement above?

- a. If the alternate interior angles are congruent, then the lines are parallel.
- b. If the alternate interior angles are not congruent, then the lines are not parallel.
- c. If the lines are parallel, then the alternate interior angles are not congruent.
- d. If the lines are not parallel, then the alternate interior angles are not congruent.

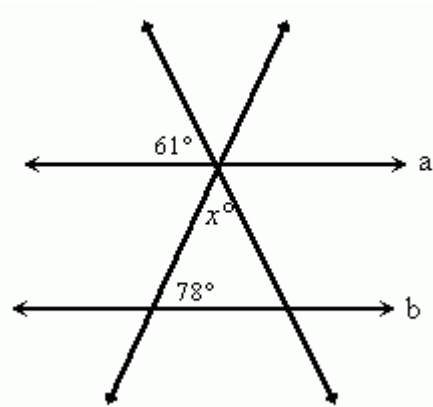
5. Given: Points H, I, J, and K. Conjecture: H, I, J, and K are noncollinear.

Which figure is a counterexample of the information above?



6.

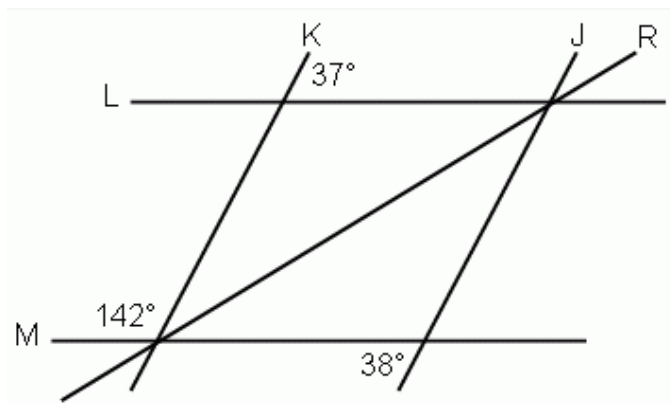
Given: $a \parallel b$



What is $m\angle x$?

- a. 41° b. 61° c. 78° d. 108°

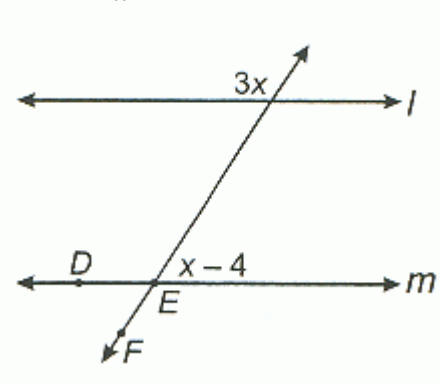
7. Given the figure below, which relationship of lines is true?



- a. $M \perp J$ b. $M \perp L$ c. $K \parallel J$ d. $M \parallel L$

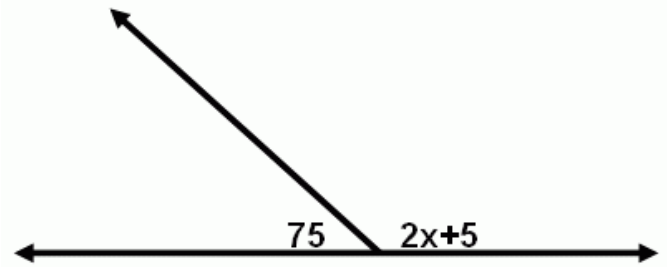
8.

Given: $l \parallel m$ What is the $m\angle DEF$?



- a. 42° b. 46° c. 134° d. 138°

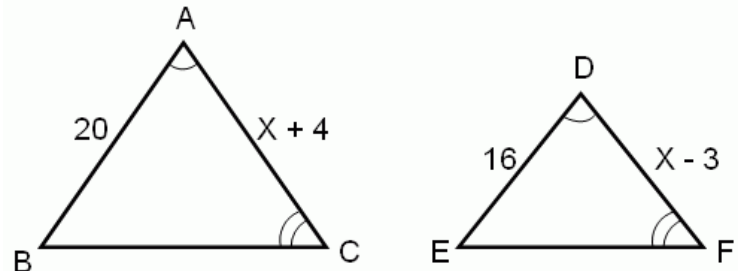
9. Given the following figure, what is the value of x ?



- a. 50 b. 10 c. 15 d. 20

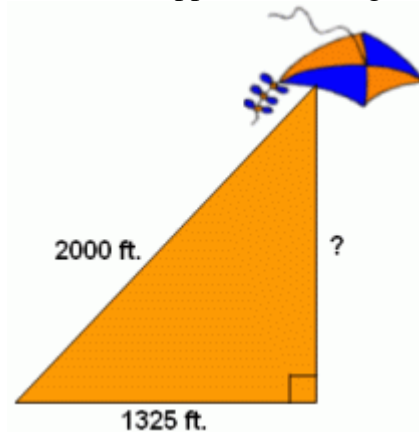
10.

Given the two triangles below, what is the length of \overline{AC} ?



- a. 35 b. 32 c. 31 d. 29

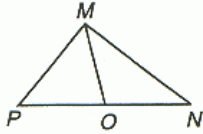
11. What is the approximate height of the kite?



- a. 1,192 feet b. 1,202 feet
c. 1,498 feet d. 954 feet

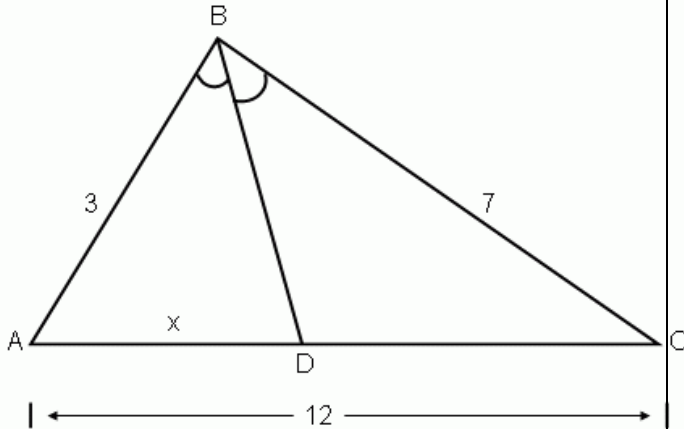
12.

Given: \overline{MO} is a median of $\triangle MNP$, $\overline{MO} \cong \overline{ON}$, and $m\angle MON = 130^\circ$.
What is the $m\angle OMP$?



- a. 25° b. 50° c. 65° d. 70°

13. Given the following triangle, what is the value of x ?



- a. 8.4 b. 7.1 c. 4.9 d. 3.6

14. Which one of the geometric figures below have the following characteristics:

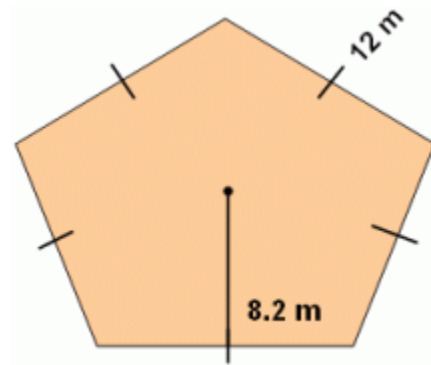
- Opposite sides are parallel
- Diagonals are different lengths
- Diagonals intersect at right angles

- a. trapezoid b. rhombus
c. rectangle d. parallelogram

15. How many sides will a regular polygon have if each exterior angle (one at each vertex) has a measure of 45° ?

- a. 12 b. 10 c. 8 d. 6

16. What is the area of the regular pentagon?



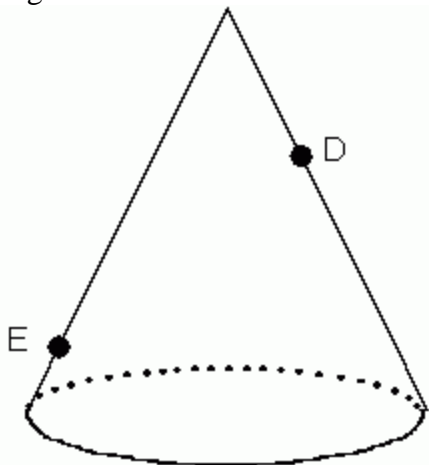
- a. 492 m^2 b. 369 m^2 c. 246 m^2 d. 240 m^2



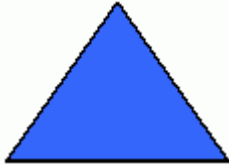

17. This is a net of a polyhedron. How should Carlos classify the figure?



- a. triangular prism b. rectangular prism
c. pentagonal prism d. heptagonal prism

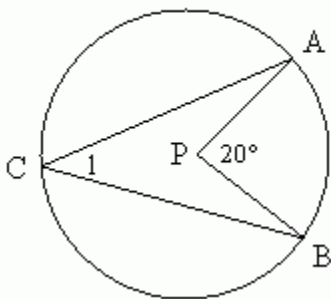
18. Given the right circular cone pictured here, if you slice the cone passing through points D and E, which of the following is the shape of the resulting cross section?



- a.  b. 
c.  d. 

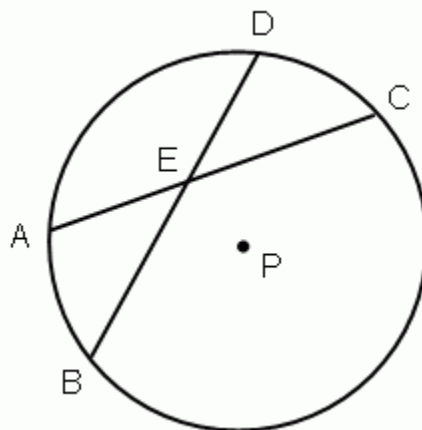
19.

What is the measure of $\angle 1$ in Circle P?



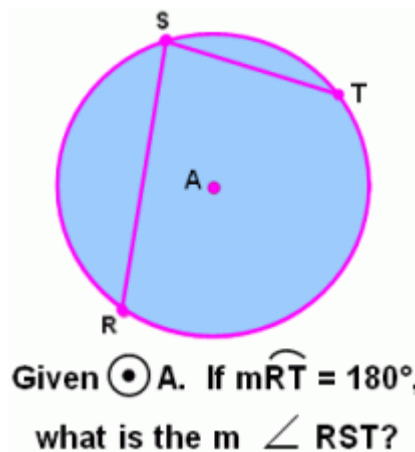
- a. 10 b. 20 c. 40 d. 60

20. Given circle P with $AE = 3$ in., $EC = 6$ in., and $DE = 4$ in. What is the length of segment BE?



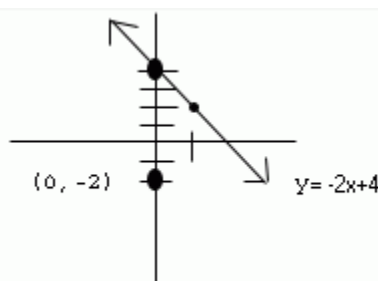
- a. 8 in b. 6.5 in c. 4.5 in d. 2 d

21.



- a. 45° b. 60° c. 90° d. 180°

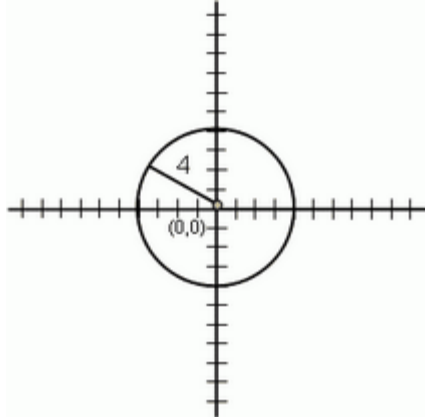
22. Given: The graph of $y = -2x + 4$.



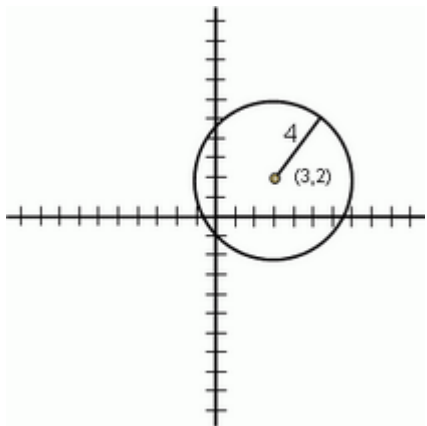
What is the equation of the line parallel to the line $y = -2x + 4$, and passing through the point $(0, -2)$?

- a. $y = \frac{1}{2}x - 2$ b. $y = \frac{1}{2}x + 0$
c. $y = -2x - 2$ d. $y = -2x + 0$

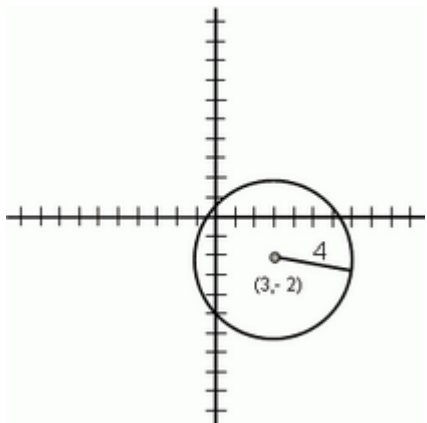
23. Given the equation $(x - 3)^2 + (y - 2)^2 = 16$.
What graph represents the circle?



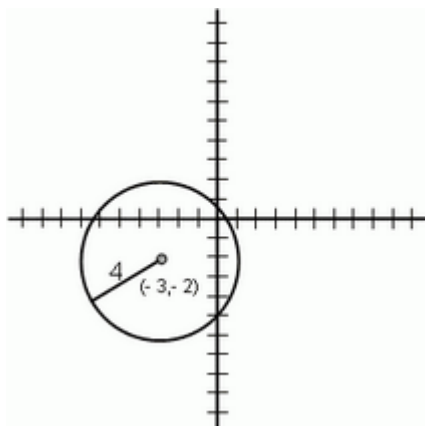
a.



b.

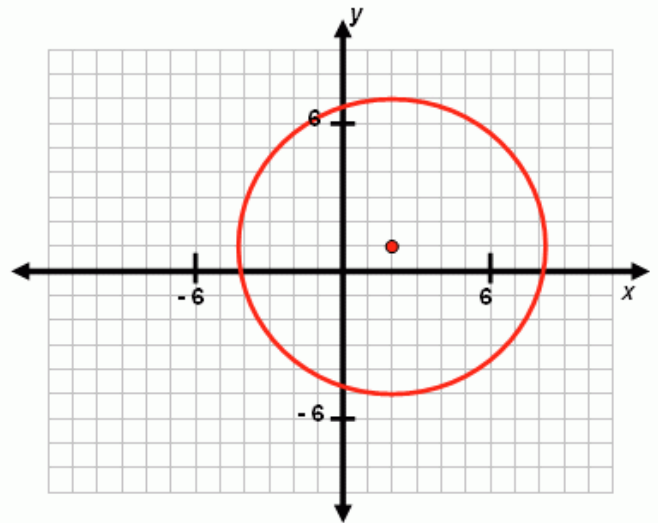


c.



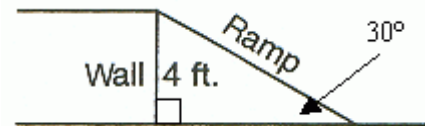
d.

25. What is the equation of the circle?



- a. $(x + 2)^2 + (y + 1)^2 = 6$
b. $(x + 2)^2 + (y + 1)^2 = 36$
c. $(x - 2)^2 + (y - 1)^2 = 6$
d. $(x - 2)^2 + (y - 1)^2 = 36$

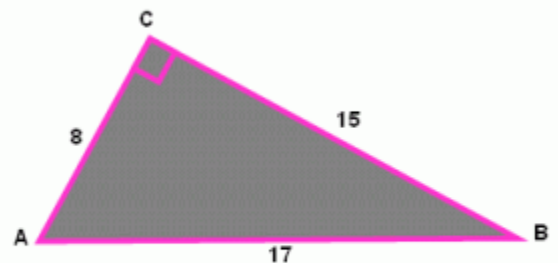
26. Builders want to make a ramp that is a 30° angle with the ground. If the ramp needs to rise 4 feet, how far will the end of the ramp be from the base of the wall?



- a. 4.0 feet b. 5.7 feet c. 6.9 feet d. 8.0 feet

- 27.

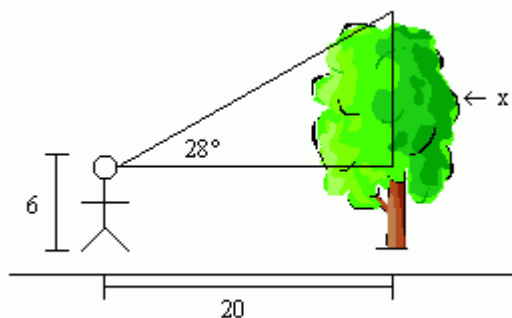
Given $\triangle ABC$,



what is $\sin B$?

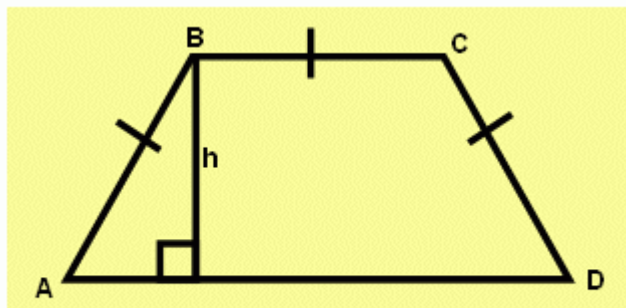
- a. $\frac{8}{17}$ b. $\frac{8}{15}$ c. $\frac{15}{17}$ d. $\frac{15}{8}$

28. A person who is 6 feet tall is standing 20 feet from a pine tree. The person is looking up to the top of a tree with an angle of 28° from the horizontal.



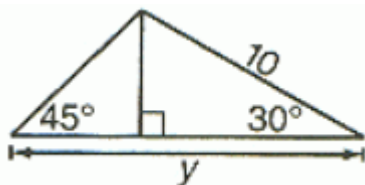
What is the total height of the tree?

- a. 9.4 feet b. 10.6 feet c. 15.4 feet d. 16.6 feet
29. Given isosceles trapezoid ABCD where $AB = 6$ in. and $AD = 10$ in.



what is the height, h , of the trapezoid?

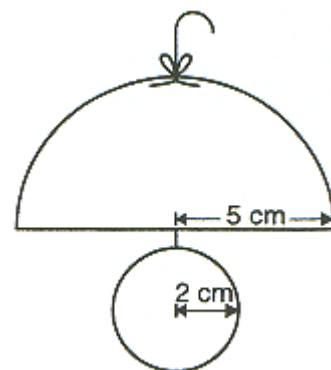
- a. $2\sqrt{5}$ in b. $4\sqrt{2}$ in c. $2\sqrt{10}$ in d. $4\sqrt{5}$ in
30. Given the following triangle, what is the value of y ?



- a. $5\sqrt{2}$ b. $5 + 5\sqrt{2}$ c. $5\sqrt{3}$ d. $5 + 5\sqrt{3}$
31. Neil is making a mold for a heat shield tile in the shape of a right triangle. Its sides are approximately 4.0, 3.5, and 5.315 inches long. What are the measures of the acute angles of the triangle?
- a. 29.0° and 61.0° b. 33.4° and 56.6°
 c. 37.0° and 53.0° d. 41.2° and 48.8°

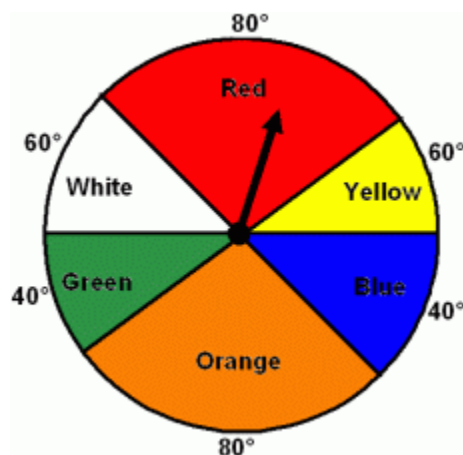
32.

The craft class is making ceramic bell mobiles. Each mobile has a smaller round bulb hanging below a larger hemisphere as shown above. The radius of the small bulb is 2 centimeters. The radius of the hemisphere is 5 centimeters. If the students paint the outside of both pieces, approximately how much surface area will they have to cover?



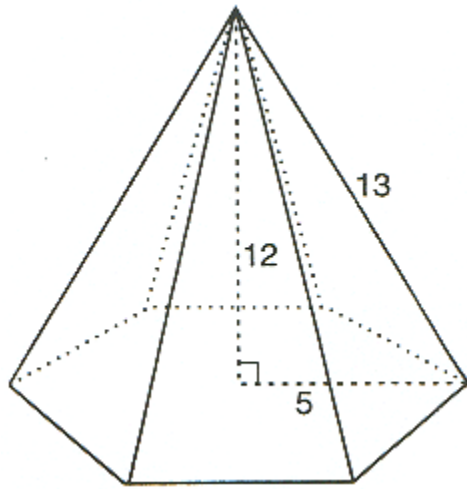
- a. 151 cm^2 b. 207 cm^2
 c. 296 cm^2 d. 364 cm^2

33. A spinner was created for a board game as pictures. If the spinner is 6 inches in diameter, what is the area of the orange sector of the spinner?



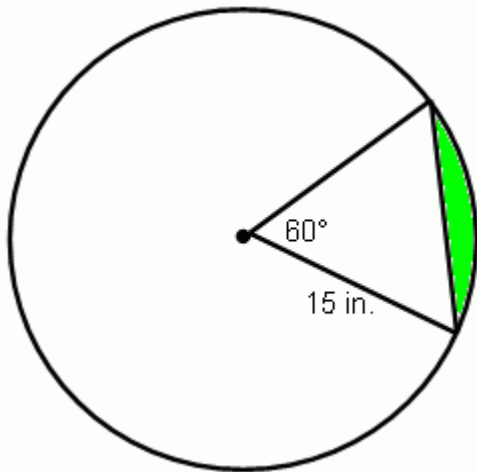
- a. about 6 in.^2 b. about 8 in.^2
 c. about 12 in.^2 d. about 24 in.^2

34. If A is the area of the hexagon, which expression should be used to compute the volume of this hexagonal pyramid?



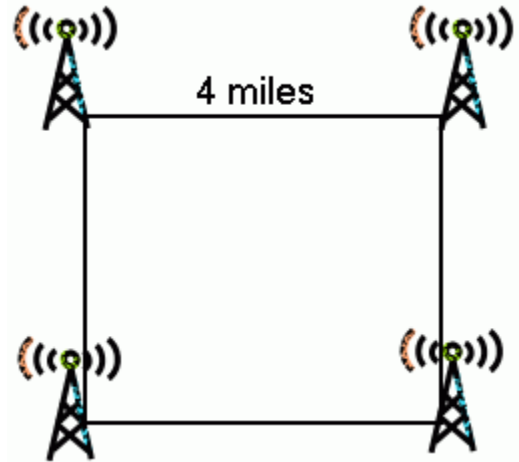
- a. $\frac{1}{3} \bullet A \bullet 12$ b. $\frac{1}{3} \bullet A \bullet 13$
 c. $\frac{1}{2} \bullet A \bullet 12$ d. $\frac{1}{2} \bullet A \bullet 13$

35. What is the approximate area of the shaded region in the figure?



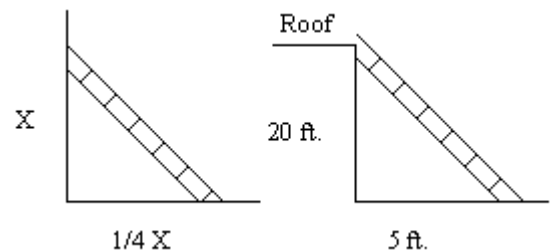
- a. 20.4 in.^2 b. 40.8 in.^2
 c. 97.4 in.^2 d. 117.8 in.^2

36. Four transmitters are located at the corners of a square that measures 4 miles on each side. Each transmitter can reach a distance of 2 miles in all directions. What is the probability that a point inside the square **cannot** be reached by any of the transmitters?



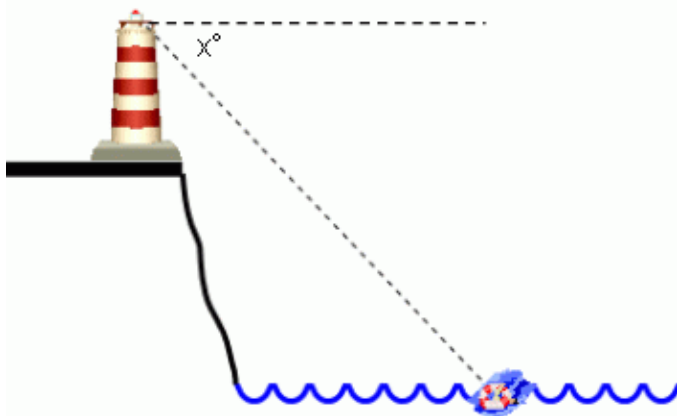
- a. 21.5% b. 39.3% c. 60.7% d. 78.5%

37. Fred is safety conscious. He knows that to be safe, a ladder should be placed $\frac{1}{4}$ of the distance from the wall as it reaches. If Fred needs to get on the roof of the school building, how long should his ladder be if the ladder rests on the roof edge and the building is 20 ft. tall?

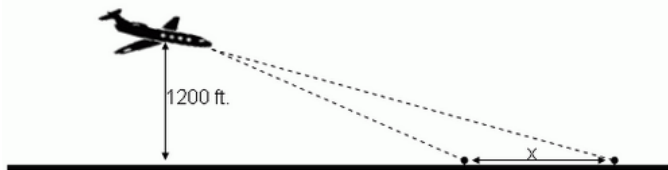


- a. $5\sqrt{17}$ ft. b. 425 ft. c. 25 ft. d. 15 ft.

38. The top of a lighthouse on a vertical cliff is 350 ft. above sea level. A buoy is 200 ft. from the base of the cliff. What is the angle of depression from the top of the lighthouse to the buoy?



- a. 60.3 degrees b. 55.2 degrees
c. 34.8 degrees d. 29.7 degrees
39. An airplane is flying at an altitude of 1,200 ft. The pilot spots two landmarks directly in front of the plane. The angle of depression to the landmark furthest away is 21 degrees and the angle of depression to the closer landmark is 35 degrees. If 1 mile is 5,280 ft., how far apart are the two landmarks to the nearest tenth of a mile?



- a. 2.7 mi. b. 2.4 mi. c. .7 mi. d. .3 mi.

Geometry CRT Review Version 1 Key

1. d
2. b
3. b
4. d
5. a
6. a
7. c
8. a
9. a
10. a
11. c
12. c
13. d
14. b
15. c
16. c
17. a
18. a
19. a
20. c
21. c
22. c
23. a
24. b
25. d
26. c
27. a
28. d
29. b
30. d
31. d
32. b
33. a
34. a
35. a
36. a
37. a
38. a
39. d